

THURSDAY, DECEMBER 20, 1894.

SIR RICHARD OWEN.

The Life of Richard Owen. By his grandson, the Rev. Richard Owen, M.A. With the scientific portions revised by C. Davies Sherborn. Also an Essay on Owen's Position in Anatomical Science, by the Right Hon. T. H. Huxley, F.R.S. (London: John Murray, 1894.)

THE life of this well-known and eminent anatomist, written by his grandson, the Rev. Richard Owen, has been based on such a large amount of material that "the writer's chief difficulty has been to compress the biography within reasonable limits." While acknowledging that the art of compression is a difficult one, we still must express some disappointment at the way in which it has been carried out in the two volumes of this biography. For over sixty years Owen filled a more or less conspicuous place in the scientific world; in a large measure a self-taught anatomist, he at a very early age became a teacher of anatomy to others, with a wondrous collection of material at his disposal to illustrate his teaching. In these volumes we do not seem to find enough about his evolution as a man of science, and we could, in some measure, have dispensed with many of the trifling details of his every-day life, which have, if any, but a passing interest. In the following sketch we attempt to show but a phase of Owen's character; but, in common with all who had any personal knowledge of him, we do not overlook, nor can we forget, the charm of his domestic and cultured life.

Richard Owen was the younger son of Richard Owen, of Fulmer Place, Bucks; he was born at Lancaster on July 20, 1804. His mother was of a Huguenot family of the name of Parrin, who came from Provence at the time of the revocation of the Edict of Nantes. He would seem to have inherited from his father many of his physical characters, his height and sturdy frame; while from his mother came his fondness for music, and a certain refinement and courtier-like style of manner which were of some value to him in after-life. Apparently his mental training began early, for we find his father writing from St. Kitt's to his mother, "that he was glad to know James (the elder brother) and Richard came on so well with their studies, and were so attentive," at a date when Richard could not have been more than three years and a half old. When six years old he was sent to the Lancaster Grammar School, to join his elder brother, a school that will be always associated with the name of Whewell, the great Master of Trinity, Cambridge, who received here his early education. Soon after he had left school, we find him apprenticed to Mr. Leonard Dickson, of Lancaster, surgeon and apothecary, and on his death, in 1822, he was transferred to Surgeon Seed, of the Royal Navy; and finally, on Mr. Seed being called upon by the Service, he was committed to the care of Mr. J. S. Harrison. Matriculating at Edinburgh University in October, 1824, he seems to have attended one winter, and possibly a summer, course of lectures. In 1825 he was in London, attending lectures at St. Bartholomew's Hospital School, and became pro-

sector for Dr. Abernethy. On August 18, 1826, he was admitted a member of the Royal College of Surgeons, London.

To the medical student of the present day, compelled to attend a five years' course of lectures and demonstrations, and to pass several examinations, there will seem something enviable in the apparent ease with which Richard Owen obtained his qualification; there was an incomplete apprenticeship at Lancaster, perhaps a year's course of lectures at Edinburgh, and another year, about which we have few details, at St. Bartholomew's, and then he set up as a medical practitioner, and gradually secured a small practice among the lawyers at Lincoln's Inn Fields. To those, however, who try to read under the lines, it will be evident that the abilities and industry of Owen, about which his mother so proudly writes, must have been of no common order. Up in that old tower at Lancaster—"Hadrian's Tower, it was called"—after the first spasm of fright, the particulars of which are so graphically told us by the Professor himself, the youth of sixteen must have carried on his anatomical investigations to such a purpose that we find him, on his visit to Edinburgh, not only able to detect the defects of the teaching of anatomy of Prof. Monro (*tertius*), but able also to attract the notice of John Barclay, and finally, on his visit to London, able to act as prosecutor to Abernethy. We would have welcomed more information as to how Owen became an anatomist. Was his worthy master at Lancaster, who could learnedly descant on certain pathological conditions, an anatomist, or did the "elder fellow pupil" about whom he writes (who was he?) help him in his studies? Probably we will never know, and yet a knowledge of his doings during these few early years of study would have helped us to an understanding of the man.

In 1827, through the influence of Abernethy, who at the time was President of the College of Surgeons, Owen was appointed Assistant Curator of the College Museum, under William Clift, and he at once proceeded to arrange the collections and to write the descriptive catalogues, the first three parts of which were published in the course of 1830. Before the end of 1827 he was engaged to be married to Miss Clift, and after an eight years' courtship they were married in 1835. William Home Clift had died from an accident in September 1832, and Owen's place at the College then became a permanent one. In 1836 he was appointed Hunterian Professor, and on the retirement of Sir Charles Bell (in the early part of 1837) from the Professorship of Anatomy and Physiology in the College, Owen was elected to the vacant chair. For these latter statements we follow the text before us; but is it not possible that there is some slight confusion here? Up to about the period when Sir Charles Bell resigned the Professorship of Anatomy, the lectures bearing on the Hunterian collections were supposed to have been given in part by the Professor of Anatomy and in part by the Professor of Surgery; but, by a special arrangement, these lectures, twenty-four in number, were, after 1837, to be delivered by Owen, as Hunterian Professor, and "the awful first lecture" was given on May 2, 1837.

For the next twenty years of Owen's life the scene was for the most part laid in Lincoln's Inn Fields.

"'Mr. Owen' was put up on our door-plate to-day. Looks most imposing," records Mrs. Owen, under the date of July 22, 1836, and it was in June 1856 that he entered upon his duties as Superintendent of the Natural History Department of the British Museum. These twenty years were, perhaps, the fullest of Owen's life. The boy who had begun his anatomical studies in Lancaster at sixteen years of age, was, some sixteen years afterwards Hunterian Professor, lecturing before brilliant audiences of grown-up men, and with material to lecture about such as has seldom fallen to the lot of any other man. Numerous were the works published during these years, and numerous were the honours conferred on him. Fully detailed lists of both, occupying many pages, will be found at the close of volume ii. The time was not all spent in tiresome work; Owen's social qualities were of a well-developed order. We are permitted, by his wife's records of their daily lives, to know of days and evenings spent in gay and festive scenes.

In chapter ix. we have a fuller account than, we think, has to this been published about the daring thoughts that were at one time in Owen's mind (1846) about the zoological collections of the British Museum. He calls them "speculations on a concentration of all zoological illustrations—living, dead, exterior, and anatomical—in one great connected establishment"; but, failing such a realisation, he would be satisfied if "all the recent and fossil zoology of the British Museum would come to this (College of Surgeons). The mineralogy would naturally be transferred to the Government Museum of Economic Geology," and "the British Museum would then be left free for the full extension of the departments which concern intellectual man." The last sentence was unfortunately expressed; and within ten years, Owen's ideas—possibly affected by lapse of time and change of scene—had vastly changed. He thought, in 1846, Lincoln's Inn Fields as central a position as Great Russell Street; afterwards, in 1856, though he liked the position in Great Russell Street well, yet for the sake of space he went out into the country. Perhaps, in taking note of this episode, we ought also mention that in 1848 he strongly urged on his friend, Dean Buckland, the importance of the great collection of shells, made by Hugh Cuming, being purchased for the British Museum.

At the close of the first volume there is an interesting letter, dated July 17, 1854, from Charles Darwin, which we do not remember to have seen before. He thanks Owen for his kind appreciation of his work on the *Cirripedia*. "I got so frightened at the thoughts of all the seaside species, that I have not illustrated and given in detail nearly enough my anatomical work, which is the only part of the work which has really interested me. I find the mere systematic part infinitely tedious. I can, however, honestly state that all I have said on the males of *Ibla* and *Scalpellum* is the result of the most careful and repeated observation. If I am ever proved wrong in it I shall be surprised."

On May 26, 1856, Owen was appointed Superintendent of the Natural History Department of the British Museum, and he entered on his duties on June 8 following. We presume that he resigned his position at the College of Surgeons at the end of May, as the letter of

the Secretary of the College, forwarding the regrets of the Council, is dated June 12, 1856. Lord Macaulay's letter to the Marquis of Lansdowne, urging that the post should be made for Owen, was written in February 1856; so that the one scene of labour was exchanged for the other almost with the rapidity of a transformation scene, and before the end of June, Owen was examining the "two collections of Mr. Hawkins—those of Dr. Mantell and Mr. Koch"—in the British Museum, which in 1846 he had believed to be so much out of place there. For the next twenty-seven years the interests of the wonderful collection were always very dear to him, and no difficulties, no rebuffs, stopped him from carrying out his plans about them to their uttermost.

Chapter ii. of vol. ii. is devoted to the history of Owen's connection with the British Museum of Natural History at South Kensington. This account "is given as nearly as possible in his own words, the substance being taken from his address to the British Association at York in 1881." It would have been well if this chapter had been revised by some one with a personal knowledge of the state of things existing in the Natural History Department of the British Museum prior to Owen's appointment, or, failing this, of some one up to the traditions of the place; for though, undeniably, space was sadly wanted for the proper display of the specimens, this department, as a department, was scarcely "the most neglected branch of the institution," nor could the condition of affairs be described as "chaos." However, in February 1859, Owen submitted his views in a report to the Trustees, asking for space to display the existing specimens and those that might be expected to come for a generation. Organised and crystallised forms, all were to be now included. This report, with plans, was presented to Parliament by the Trustees; the space demanded required the removal of the collections from Bloomsbury, the time had not come for so great a change, and Mr. Gregory, afterwards Sir William Gregory, here referred to as an "Irish Member," asked for a Committee of Inquiry, which, after a pretty vigorous debate on July 22, 1861, was granted. In May 1862 there was a second stormy debate in the House of Commons, led by Lord Beaconsfield, and the Government were refused leave, by a large majority, to bring in a Bill for the removal of portions of the Trustees' collections in the British Museum. Things, however, changed in 1863; Sir William Gregory had been made Governor of Ceylon (it is difficult to see what effect this could have had on the matter), and in June of that year leave was obtained by a majority of 132 to purchase five acres for the required Natural History building. Between 1880 and 1883 Owen was engaged in superintending the removal of the specimens from Bloomsbury to South Kensington, and at the close of the latter year he retired from his post, the realisation of his idea being attained.

When Owen gave up the charge of the Museum of the College of Surgeons, he also surrendered the Hunterian Chair; he was thus enabled to accept the Lectureship on Palæontology at the Royal School of Mines, in 1857. He gave his first lecture on February 26, concluding the course on April 2. Mrs. Owen notes in her diary, Richard's "design has been clear throughout in these lectures—to show the power of God in his creation." Towards the end of

the same year he was appointed Fullerian Professor of Physiology at the Royal Institution, so that there was no relaxation in lecturing work during these years. Owen was President of the British Association at its meeting at Leeds in 1857. We also get a glimpse of him at Aberdeen in 1859 but can find no trace in these volumes of his presence at the Oxford or Cambridge meetings of 1860 and 1862; indeed, even when noticing the publication of the memoir on the Aye-Aye in 1863, no reference is made to the remarkable paper read at the Cambridge meeting on the characters of this mammal as a test of the Lamarckian and Darwinian hypotheses of the transmutation and origin of species, nor is there any allusion to the "two pitched battles about the origin of species at Oxford," nor to Charles Kingsley's well-meant little squib, published during the Cambridge meeting by Macmillan and Co., "On the great Hippocampus Question."

Mrs. Owen, after a married life of nearly forty years, died in May 1873. In 1875 Owen refers to his daily task work becoming tiresome, as well it might to a man past seventy, but several important memoirs were published by him between this year and 1885, and in 1881 he delivered a long address to the Biological Section of the British Association at York, on the new Natural History Museum; this was almost his last public address, and it was delivered with a force and power that reminded his hearers of his early days. On January 5, 1884, Owen was, on his retirement from the post of Superintendent of the British Museum, gazetted a K.C.B. He was present at a meeting of the Linnean Society, at Burlington House, in May 1888, "to receive a gold medal." The medal thus alluded to was one of two struck in commemoration of the centenary of the Linnean Society; one medal was to be given to a botanist, and one to a zoologist. The botanist on this occasion was Sir Joseph Dalton Hooker. Up to the close of 1889 he was occasionally seen at the Athenæum. Early in 1890 he had a slight paralytic seizure, from which he never entirely recovered. In his well-known library, when able to be out of bed, he would sometimes sit for hours looking out wistfully at the view over the park, and on the morning of December 16, 1892, the end quite peacefully came.

As to Owen's position as a writer on anatomical science, we have no occasion to enter, for what we conceive to be by far the most interesting portion of these two volumes is a criticism, in the true sense of this word, thereof so straightforward, searching, and honest as to leave nothing further to be desired. We should like to have transferred the greater part of this analysis by Prof. Huxley of the work done by Owen to our pages. He doubts "if in the long annals of anatomy more is to be placed to the credit of any single worker" than to Owen, and his is "work some of which occupies a unique position, if one considers, not merely its general high standard of excellence, but the way in which so many of the memoirs have opened up new regions of investigation."

As to the judgment passed on the speculative side of Owen's work, will not all now deplore that so much tireless industry, great capacity, and extensive learning were spent on themes profiting so little as the archetype of the vertebrate skeleton and the nature of limbs? Perhaps it may seem to some that Prof. Huxley has

devoted too much space to Owen's speculative writings, but, as he says:

"Obvious as are the merits of Owen's anatomical and palæontological work to every expert, it is necessary to be an expert to discern them; and endless pages of analysis of his memoirs would not have made the general reader any wiser than he was at first. On the other hand, the nature of the broad problems of the 'Archetype' and of 'Parthenogenesis' may easily be stated in such a way as to be generally intelligible; while from Goethe to Zola, poets and novelists have made them interesting to the public. I have therefore permitted myself to dwell upon these topics at some length; but the reader must bear in mind that whatever view is taken of Sir Richard Owen's speculations on these subjects, his claims to a high place among those who have made great and permanently valuable contributions to knowledge remain unassailable."

Several interesting portraits of Owen, taken at different periods of his life, form part of the illustrations of these volumes. There are also sketches of the Gateway, Lancaster Castle, and of Sheen Lodge, in Richmond Park.

ELECTROMAGNETIC THEORY.

Electromagnetic Theory. By Oliver Heaviside, F.R.S. Vol. I. (London: The Electrician Printing and Publishing Company, Limited, 1893.)

THE basis of Mr. Heaviside's treatise is the interlinked magnetic and electric circuits. This is taken from Maxwell, but it is much more fully developed, and the analogy between the electric and magnetic circuits is followed out with great care, and is insisted upon at every turn. That you can have a conductor charged electrically, while you cannot have a single magnetic pole, destroys the perfection of the analogy but little. There is a more serious hiatus in the absence of the magnetic analogue to an electric conductor. Mr. Heaviside, however, completes the analogy by imagining such things as magnetic conductors and magnetic currents. The magnetic displacement and convection currents of course exist, but magnetic conduction current, with its corresponding magnetic conductivity, is a most useful notion. The ideas of the magnetic current must not be confused with the unscientific notions of magnetomotive force and magnetic resistance, which are supposed to bring electromagnetism within the intellectual reach of the benighted practical man. At first Mr. Heaviside uses the hypothetical magnetic current as a means of giving his readers a thorough grasp of the interlinked circuits, and of completing the analogy between them. Later, however, in dealing with submarine messages, he shows that magnetic conductivity outside the wires, which is easy to treat mathematically, would have the same effect on the messages as electric resistance in the cable itself, which would be more difficult.

As Mr. Heaviside's first volume has been already reviewed in the *Electrician* and *Philosophical Magazine* by Profs. Fitzgerald and Minchin, and as the work is so full and so suggestive that a review might be longer than the book, this notice will deal mainly with matters not already fully discussed, though of course there will be some overlapping.